NCERT Solution for Class 12 Macroeconomics Chapter 2 - National Income Accounting

NCERT Macroeconomics Solutions Class 12 Chapter 2

1. What are the four factors of production and what are the remunerations to each of these called?

Land, Labour, Capital and Entrepreneurship are the four factors of production.

i) The land is a natural resource and the primary factor of production. Land rent is the remuneration paid for the use of land.

ii) Labour is the physical or mental work done by an employee that is required for production. The remuneration for labour is paid through wages or salary.

iii) Capital is the wealth or monetary investment that is essential for production. Capital can also mean the assisting tools, the machinery and other means of production. The remuneration for capital is called interest.

iv) Entrepreneurship refers to the task of the individual who brings all the factors of production together and manages them. The remuneration or reward of the entrepreneur is the profit that is gained after the product is sold.

2. Why should the aggregate final expenditure of an economy be equal to the aggregate factor payments? Explain.

The aggregate final expenditure of an economy is the sum of all the spending in the economy. In economics, factor payment denotes the wage, interest, rent and other payments done as a remuneration for the factors or production. The income earned is either spent on goods on services or saved. But, all savings can be counted as investments for future expenditure. Therefore, the aggregate final expenditure of an economy should be equal to aggregate factor payments.

3. Distinguish between stock and flow. Between net investment and capital which is a stock and which is a flow? Compare net investment and capital with flow of water into a tank.

The difference between stock and flow are as follows

Stock	**Flow**
Stocks are defined at a point in time	Flows are defined over a period of time
Stocks are a static concept	Flows are a dynamic concept
It does not have a time dimension	It has a time dimension
Examples: Wealth, Money supply, etc.	Examples: National Income, Investments, etc.

The difference between net investment and capital is explained below

Capital	**Net Investment**
Capital is tied to liquidity	Investment is tied to equity
Capital is a stock variable	Net Investment is a flow variable
Capital is on the liabilities side of the balance sheet	Investment is on the assets side of the balance sheet

Since it is measured over a period of time, flow of water in a tank can be compared to net investment. Stock of water in a tank is measured at a point in time and can be compared to capital.

4. What is the difference between planned and unplanned inventory accumulation? Write down the relation between change in inventories and value added of a firm.

Planned inventory accumulation is the planned accumulation of inventories and stocks. Firms often experience an accumulation in their inventories based on the expected fall in sales or projected fall of demand from the consumers. Unplanned inventory accumulation happens when the inventories and stocks get accumulated due to an unexpected fall in sales and demand.

5. Write down the three identities of calculating the GDP of a country by the three methods. Also briefly explain why each of these should give us the same value of GDP.

The three methods of identifying GDP of a nation are:

1. Expenditure Method
2. Income Method
3. Value added Method or Product Method

Expenditure Method: In the expenditure method, national Income is calculated based on the expenditure done on purchase of final goods and services that are produced in the economy.

The formulae for calculating GDP is

GDP = C + I + G + (X - M)

Where,

C=Consumer spending on goods and services

I=Investor spending on business capital goods

G=Government spending on public goods and services

X= Exports

M= Imports

Now,

GDP – Depreciation = Net Domestic Product

NDP – Net Indirect Tax - = NDP

NDP + NFIA = National Income

Where NDP= Net Domestic Product

NFIA = Net Factor Income from Abroad

Income Method: Income Method: This method is used to determine national income generated from the factors of production like capital, labour, land and profits of organisation. Another factor added is mixed income that is income generated from self-employed persons, farming and sole proprietorship firms.

Therefore national income can be calculated as:

Net Domestic Income = Compensation +Interest + Rent + Profit + Mixed income

Net Domestic Income + NFIA (Net Factor Income from Abroad) = Net Domestic Income.

Product Method: In this method which is also known as value added method, the income is measured as per value addition by the products of firms. It is calculated as the summation of Gross Value Added in the primary, secondary and tertiary sectors.

Net Domestic Product = GDP – Depreciation

NDP at Factor Cost = NDP_{MP} – Net Indirect Tax

NDP at factor cost + NFIA = National Income

Where NDP= Net Domestic Product

NFIA = Net Factor Income from Abroad

6. Define budget deficit and trade deficit. The excess of private investment over saving of a country in a particular year was Rs 2,000 crores. The amount of budget deficit was (−) Rs 1,500 crores. What was the volume of trade deficit of the country?

Budget Deficit

Budget deficit is referred to the situation when the expenditure done by government exceeds its income.

Budget Deficit is mathematically represented as $G - T$

Where,

G is the expenditure done by government

T is the income earned by the government

Trade Deficit

When a country spends more on importing than on earning revenue through exports, such a situation is referred to as trade deficit

Trade Deficit is represented as M − X

Where,

M expenditure on imports

X revenue earned from exports

As per the question

I − S = Rs.2000 crores.

Budget Deficit

G – T = (−) Rs.1500 crores.

Therefore, trade deficit can be calculated as

Trade deficit = [I − S] + [G − T]

= 2000 + [−1500]

= Rs.500 crores.

7. Suppose the GDP at market price of a country in a particular year was Rs 1,100 crores. Net Factor Income from Abroad was Rs 100 crores. The value of Indirect taxes − Subsidies was Rs 150 crores and National Income was Rs 850 crores. Calculate the aggregate value of depreciation.

As per the question following variables are present

National Income (NNP_{FC}) = Rs.850 crores

GDP_{MP} = Rs.1100 crores

Net factor income from abroad (NFIA) = Rs.100 crores

Net indirect taxes = Rs.150 crores

$NNP_{FC} = GDP_{MP}$ + NFIA − Depreciation − Net indirect taxes

Putting these values in the formula,

850 = 1100 + 100 − Depreciation − 150

⇒ 850 = 1100 − 50 − Depreciation

⇒ 850 = 1050 − Depreciation

⇒ Depreciation = 1050 − 850 = Rs.200 crores

Hence, the aggregate value of depreciation is 200 crores.

8. Net National Product at Factor Cost of a particular country in a year is Rs 1,900 crores. There are no interest payments made by the households to the firms/government, or by the firms/government to the households. The Personal Disposable Income of the households is Rs 1,200 crores. The personal income taxes paid by them is Rs 600 crores and the value of retained earnings of the firms and government is valued at Rs 200 crores. What is the value of transfer payments made by the government and firms to the households?

According to the details present in question

Net National Product at Factor Cost (NNP_{FC}) = Rs.1900 crores

Personal Disposable Income (PDI) = Rs.1200 crores

Personal income tax = Rs.600 crores

Value of retained earnings = Rs.200 crores

PDI = NNP_{FC} – Value of retained earnings of firms and government + value of transfer payments – personal tax

⇒ 1200 = 1900 – 200 + Value of transfer payments – 600

⇒ 1200 = 1100 + Value of transfer payments

⇒ Value of transfer payment = 1200 – 1100 = Rs 100 crores

Therefore the value of transfer payment is Rs.100 crores.

9. From the following data, calculate Personal Income and Personal Disposable Income.

		Rs (crore)
(a)	**Net Domestic Product at factor cost**	**8,000**
(b)	**Net Factor Income from abroad**	**200**
(c)	**Undisbursed Profit**	**1,000**
(d)	**Corporate Tax**	**500**
(e)	**Interest Received by Households**	**1,500**
(f)	**Interest Paid by Households**	**1,200**
(g)	**Transfer Income**	**300**
(h)	**Personal Tax**	**500**

As per the question

Personal Income = NDP_{FC} + NFIA + Transfer Income − Undistributed profit − corporate tax − Net interest paid by households

Here,

NDP_{FC} = Rs.8000 crores

NFIA = Rs.200 crores

Transfer Income = Rs.300 crores

Undistributed profit = Rs.1, 000 crores

Corporate tax = Rs.500 crores

Net interest paid by households = Interest paid − Interest received

= 1200 − 1500

= (−) Rs.300 crores

Now, putting all the values in the formulae

Personal Income = NDP_{FC} + NFIA + Transfer Income − Undistributed profit − corporate tax − Net interest paid by households

Personal Income = 8000 + 200 + 300 − 1000 − 500 − (− 300)

= 8000 + 200 + 300 − 1000 − 500 + 300

⇒ Personal Income = 7300

Therefore, the personal income is Rs.7300 crores

Now,

Personal Disposable income = Personal Income − Personal Payments

= 7300 − 500

= Rs.6800 crores

10. In a single day Raju, the barber, collects Rs 500 from haircuts; over this day, his equipment depreciates in value by Rs 50. Of the remaining Rs 450, Raju pays sales tax worth Rs 30, takes home Rs 200 and retains Rs 220 for improvement and buying of new equipment. He further pays Rs 20 as income tax from his income. Based on this information, complete Raju's contribution to the following measures of income (a) Gross Domestic Product (b) NNP at market price (c) NNP at factor cost (d) Personal income (e) Personal disposable income.

(i) Gross Domestic Product or GDP = Rs.500 (This is the earning by Raju in a day from haircuts)

(ii) NNP at market price or NNP_{MP} = GDP – Depreciation

Putting the values of GDP and depreciation we get NNP_{MP}

= 500 − 50

= Rs.450

(iii) NNP at factor cost or $NNP_{FC} = NNP_{MP}$ − Sales tax

Here NNP_{MP} = 450

Sales Tax= 30

Therefore NNP_{FC} is

= 450 − 30

= Rs.420

(iv)Personal Income or PI = NNP_{FC} − Retained earnings

Here NNP_{FC} = 420

Retained earnings = 220

Therefore, Personal Income is

= 420 − 220

= Rs.200

(v) Personal Disposable Income or PDI = PI − Income tax

Putting values of PI and Income Tax we get PDI is

= 200 − 20

= Rs.180

11. The value of the nominal GNP of an economy was Rs 2,500 crores in a particular year. The value of GNP of that country during the same year, evaluated at the prices of same base year, was Rs 3,000 crores. Calculate the value of the GNP deflator of the year in percentage terms. Has the price level risen between the base year and the year under consideration?

According to the question

Nominal GNP = Rs.2500

Real GNP = Rs.3000

$$\text{GNP deflator} = \frac{\text{Nominal GNP}}{\text{Real GNP}} \times 100$$

Therefore

$$\text{GNP deflator} = \frac{2500}{3000} \times 100$$

= 83.33%

As per the numbers the price level reduced by (100 - 83.33) = 16.67 %

12. Write down some of the limitations of using GDP as an index of welfare of a country.

There are various limitations to using GDP as a measure of the welfare of a country. GDP (Gross Domestic Product) is the total aggregate value of all goods and services produced within the boundaries of a country or an economy. GDP can be a good indicator of a country's economic size, growth and value. It is essentially a total measure of all the economic activities taking place in the economy. The relationship between welfare and GDP is contested and not conclusive. Here are some reasons why GDP cannot be a measure of welfare in a country.

i) GDP gives us only a measure of the total income of an economy. It does not provide us any details about how the earned income is distributed between the people. In countries with a high rate of inequality, a growth in GDP disproportionately benefits the wealthy, leaving the average person with less benefits.

ii) GDP does not take into account the environmental costs of production and development. A factory causing environmental degradation and pollution might be contributing to the GDP, but the long-term costs and consequences of such production is not taken into account in the GDP calculation. Therefore, the GDP value of an economy is not a reflection of environmental welfare.

iii) Consumption and spending does not necessarily mean 'well-being' for the people. The citizens of a country could be spending more and raising their income, but other factors like access to healthcare, education are essential for their well-being. GDP does not speak for the average citizen's Standard of living and Quality of Life.

iv) There are several socioeconomic factors like gender development, literacy, freedom and equality which play a part in the overall welfare of a society. GDP ignores these factors of social progress and human development.